

REMARKS/ARGUMENTS

Claims 1, 3, 5, 6, 11-18, 20, 21, 25-28, and 30-32 are pending.

Claims 1, 3, 5, 6, 11-21, 25-28, 30-33, and 38 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention.

Claims 1, 3, 5, 6, 11-21, 25, 28, 31 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Wenstrand et al (US2004/0155860 A1) in view of Schneider, Jr. (US 3,733,447 A).

Claims 26, 27, and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Schneider, Jr. (US 3,733,447 A) as applied to claims 6 and 32 and further in view of Davis (US 4,196,429 A).

Claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Schneider, Jr. (US 3,733,447 A) further in view of Kato et al (US 5,837,951 A).

Claim 38 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Schneider, Jr. (US 3,733,447 A), further in view of Popper et al. (US 5,790,873 A).

Claims 1, 3, 5, 6, 12-21, 25, 28, 31 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Wenstrand et al (US2004/0155860 A1) in view of Chou (US 6,559,396 B1).

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Chou (US 6,559,396 B1) and further in view of Schneider, Jr. (US 3,733,447 A).

Claims 26, 27, and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Chou (US 6,559,396 B1) and further in view of Davis (US 4,196,429 A).

Claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Chou (US 6,559,396 B1) and further in view of Kato et al. (US 5,873,951 A).

Claim 38 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wenstrand et al (US2004/0155860 A1) and Chou (US 6,559,396 B1) and further in view of Popper et al. (US 5,790,873 A).

Claim Objections

Claim 1 has been amended and as such, the objection is believed to be overcome.

Claim 38 has been canceled, and so the objection is moot.

The Claimed Invention

An aspect of the present invention is the use of a printed circuit board in an optical mouse system that is configured with motion sensing capability. Independent claim 1 has been amended to more clearly set forth this aspect of the present invention.¹ In particular, the claimed invention provides components for sensing motion using the printed circuit board of the optical mouse system as one of the components. Claim 1 as amended recites:

An optical mouse system comprising a printed circuit board, the optical mouse system further comprising:

a contact pad comprising a plurality of stationary contacts disposed on a major surface of said printed circuit board of said optical mouse system;

a ball contact movably disposed atop said stationary contacts of said contact pad;

a housing enclosing said ball contact and a portion of said contact pad, said housing sealably disposed on said major surface of said printed circuit board of said optical mouse system, at least two of said stationary contacts extending along said major surface beyond an interior of said housing from between said housing and said major surface; and

a detection circuit connected to said at least two of said stationary contacts and having a trigger signal output. (underlining added for emphasis)

¹ The previously appended limitations relating to wake-up and sleep modes were rejected in view of Wenstrand. Without conceding the merits of the rejection, the appended limitations have been canceled in favor of the limitations set forth in the instant response in order to more clearly point out the present invention.

By comparison, the art of record is that the prior art references teach a motion sensor as a device that is separate and distinct from the printed circuit board to which it would be assembled. For example, in the instant Office action, the sensor of Schneider was alleged to be combinable with Wenstrand presumably as a separate device that is assembled (perhaps soldered) to a PC board of the Wenstrom mouse. Accordingly, Wenstrand does not show:

An optical mouse system comprising a printed circuit board, the optical mouse system further comprising:

a contact pad comprising a plurality of stationary contacts disposed on a major surface of said printed circuit board of said optical mouse system;

a ball contact movably disposed atop said stationary contacts of said contact pad;

a housing enclosing said ball contact and a portion of said contact pad, said housing sealably disposed on said major surface of said printed circuit board of said optical mouse system (underlining added to emphasize)

Though Schneider teaches a motion detector, Schneider cannot be relied on because Schneider does not show:

a contact pad comprising a plurality of stationary contacts disposed on a major surface of said printed circuit board of said optical mouse system; (underlining added for emphasis)

or

a housing enclosing said ball contact and a portion of said contact pad, said housing sealably disposed on said major surface of said printed circuit board of said optical mouse system (underlining added to emphasize)

Furthermore, Schneider does not show:

a contact pad comprising a plurality of stationary contacts disposed on a major surface of said printed circuit board of said optical mouse system;

a housing [where] at least two of said stationary contacts extending along said major surface beyond an interior of said housing from between said housing and said major surface; (underlining added)

Accordingly, the combined teachings of Wenstrand and Schneider fail to render obvious the claimed invention as recited in claim 1.

The dependent claims are believed to be allowable based on the allowability of the base claim.

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Examining Group 2629

PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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